

Dr. Atanu Maity : Curriculum Vitae

CONTACT INFORMATION Theoretische Physik I
Julius-Maximilians-Universität Würzburg
Am Hubland (Gebäude:M1 Informatik/Physik, Raum:03.017), Würzburg,
Germany-97074

Ph-(+91)9647497858
atanu.maity@uni-wuerzburg.de
amphy91@gmail.com

RESEARCH INTERESTS Orders in frustrated systems, Valence bond solids, Quantum spin Liquids, Topological phases in spin models, Magnetism in non-Euclidean geometries, Altermagnetism, Quantum spin model simulator using Rydberg atom arrangements, Optical lattice.

PUBLICATIONS/ PREPRINTS

- Atanu Maity*, Andreas Feuerpfel*, Ronny Thomale, Subir Sachdev, Yasir Iqbal, “Unified gauge-theory description of quantum spin liquids on square-based frustrated lattices”, [arXiv:2603.15745 \(2026\)](#)
- Felix Dusel, Tobias Hofmann, Atanu Maity, Yasir Iqbal, Martin Greiter, Ronny Thomale, “Chiral gapless spin liquid in hyperbolic space”, [Phys. Rev. Lett. 134, 256604 \(2025\)](#)
- Matteo Dürrnagel*, Hendrik Hohmann*, Atanu Maity, Jannis Seufert, Michael Klett, Lennart Klebl, Ronny Thomale, “Altermagnetic phase transition in a Lieb metal”, [Phys. Rev. Lett. 135, 036502 \(2025\)](#)
- Andreas Feuerpfel, Atanu Maity, Ronny Thomale, Yasir Iqbal, Subir Sachdev, “Higgs criticality of Dirac spin liquids on depleted triangular lattices”, [arXiv:2603.28860 \(2026\)](#)
- Jonas Issing, Jannis Seufert, Michael Klett, Sarbajit Mazumdar, Yasir Iqbal, Ronny Thomale, Atanu Maity, “Engineering altermagnetic orders on the square-kagome lattice through sublattice interference”, [arXiv:2603.12022 \(2026\)](#)
- Andreas Feuerpfel, Leyna Shackleton, Atanu Maity, Ronny Thomale, Subir Sachdev, Yasir Iqbal, “Unifying Dirac Spin Liquids on Square and Shastry-Sutherland Lattices via Fermionic Deconfined Criticality”, [arXiv:2601.19980 \(2026\)](#)
- Atanu Maity, Francesco Ferrari, Sylvain Capponi, Karlo Penc, Janik Potten, Tobias Müller, Andreas Feuerpfel, Ronny Thomale, Jong Yeon Lee, Rhine Samajdar, Yasir Iqbal, “Evidence for a \mathbb{Z}_2 Dirac spin liquid in the generalized Shastry-Sutherland model”, [arXiv:2501.00096 \(2025\)](#), [Under review in Phys. Rev. X](#)
- Atanu Maity, Yasir Iqbal, Rhine Samajdar, “Fermionic parton theory of Rydberg \mathbb{Z}_2 quantum spin liquids”, [arXiv:2409.17219 \(2024\)](#), [Under review in Phys. Rev. Lett.](#)
- Atanu Maity, Rhine Samajdar, Yasir Iqbal, “Gapped and gapless quantum spin liquids on the ruby lattice”, [arXiv:2409.16344 \(2024\)](#), [Under review in Phys. Rev. B](#)
- Sourin Chatterjee, Atanu Maity, Janik Potten, Tobias Müller, Andreas Feuerpfel, Ronny Thomale, Karlo Penc, Harald O Jeschke, Rhine Samajdar, Yasir Iqbal, “Semi-Dirac spin liquids and frustrated quantum magnetism on the trellis lattice”, [Phys. Rev. Research 8, 013191 \(2026\)](#)
- Jonas Sonnenschein*, Atanu Maity*, Chunxiao Liu*, Ronny Thomale, Francesco Ferrari and Yasir Iqbal, “Candidate quantum spin liquids on the maple-leaf lattice”, [Phys. Rev. B 110, 014414 \(2024\)](#)
- Nils Niggemann*, Nikita Astrakhantsev*, Arnaud Ralko*, Francesco Ferrari*, Atanu Maity, Tobias Müller, Johannes Richter, Ronny Thomale, Titus Neupert, Johannes Reuther, Yasir Iqbal, and Harald O. Jeschke “Quantum paramagnetism in the decorated square-kagome antiferromagnet $\text{Na}_6\text{Cu}_7\text{BiO}_4(\text{PO}_4)_4\text{Cl}_3$ ”, [Phys. Rev. B 108, L241117 \(2023\)](#), [Letters](#)
- Aishwarya Chauhan*, Atanu Maity*, Chunxiao Liu*, Jonas Sonnenschein, Francesco Ferrari and Yasir Iqbal, “Quantum spin liquids on the diamond lattice”, [Phys. Rev. B 108, 134424 \(2023\)](#), [Editors’ Suggestion](#)
- Atanu Maity, Francesco Ferrari, Ronny Thomale, Saptarshi Mandal, Yasir Iqbal, “Projective symmetry group classification of Abrikosov fermion mean-field Ansätze on the square-octagon lattice”, [Phys. Rev. B 107, 134438 \(2023\)](#)
- Atanu Maity, Yasir Iqbal and Saptarshi Mandal, “Competing orders in a frustrated Heisenberg model on the Fisher lattice”, [Phys. Rev. B 102, 224404 \(2020\)](#)

- Atanu Maity and Saptarshi Mandal, “Quantum theory of spin waves for helical ground states in a hollandite lattice”, *J. Phys.: Condens. Matter* 30 485803 (2018)

*= **These authors contributed equally.**

RESEARCH
EXPERIENCE

Julius-Maximilians-Universität Würzburg, Würzburg, Germany

Postdoc, Theoretische Physik I, December 12, 2023 - Continuing
Institut für Theoretische Physik und Astrophysik and Würzburg-Dresden Cluster of Excellence ct.qmat

- Mentor: Prof. Dr. Ronny Thomale

Indian Institute of Technology (IIT) Madras, Chennai, India

Institute Postdoctoral Fellow, Department of Physics January 20, 2022 - November 28, 2023

- Mentor: Prof. Dr. Yasir Iqbal

Institute Of Physics, Bhubaneswar, India

Doctoral Research Fellow August 01, 2015 - January 14, 2022

- Thesis Title: *Classical Orders, VBS, QSL in Fisher Lattice & Spin Wave Analysis in Hollandite Lattice*
- Advisor: Prof. Dr. Saptarshi Mandal

TEACHING/
OTHER
EXPERIENCES

Teaching assistant, B.Tech Lab, IIT Madras, India August 13, 2023 - November 15, 2023

Teaching assistant, B.Tech Lab, IIT Madras, India March 13, 2023 - June 15, 2023

Teaching assistant, B.Tech Lab, IIT Madras, India November 7, 2022 - February 22, 2023

Teaching assistant, M.Sc Lab, IIT Madras, India August 3, 2022 - October 31, 2022

EDUCATION

Vidyasagar University, West Bengal, India

M.Sc., Physics (Specialization: Solid State Physics) June 2014

- Thesis Topic: *Tunneling Through Electrically Biased Multi Barrier Semiconductor in Non-Relativistic Approach.*
- Advisor: Prof. P K Mahapatra

Midnapore College, West Bengal, India

B.Sc., Physics (Honours) May 2012